

Work Order ID 145263

Thursday, May 05, 2016 9:25:47 AM

145263

Page 1

Item ID: D6101-003

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Saddle Billet, 7075

Start Date: 5/6/2016 Start Qty: 20.00

20

Cust Item ID:

Required Date: 5/20/2016 Req'd Qty: 20.00

20

Customer:

Reference:

Approvals:

Process Plan: MLSDate: MAY 05 2016

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D6101	Rev B								
100	PURCHASING	0.00							DAS 13 9-89
100									
Purchasing	Memo	0.00							
Purchasing	Issue P/O: <u>32296</u>								
	a) Description: Alluminum billet								
	b) 7.875" x 6.250" x 2.00" thick								
	c) Tolerance on all dimensions are +0.030"/-0.000"								
	d) Grain direction along 7.875" length								
	e) Material: 7075-T7351 (QQ-A-250/12)								
	f) Material certification required								
110	Receive & Inspect for Damage & Mat'l Certs	0.00							
110									
Packaging	Memo	0.40							
Packaging	Ensure material certification is attached								

20 MAY 09 201620x Sp 16-05-20

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :				MRB (QSI042) Approval	
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : ☐							
Misidentified ☐	Past Due ☐								

Work Order ID 145263

Thursday, May 05, 2016 9:25:47 AM

145263

Page 2

Item ID: D6101-003 Accept ***N900040100*** Setup Start ***NS1***
 Revision ID: Stop ***NS2***
 Item Name: Saddle Billet, 7075
 Start Date: 5/6/2016 Start Qty: 20.00 ***20*** Cust Item ID:
 Required Date: 5/20/2016 Req'd Qty: 20.00 ***20*** Customer:
 Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120 *120* QC Quality Control	QC6- Inspect dimensions to drawing Memo Ensure Material certification comply to Dwg D6101	0.00 0.00				20	0		DAS 14 9-30 16/05/24
130 *130* Packaging Packaging	Identify as per dwg & Stock Location: <u>MAT040</u> Memo LOCATION: MAT046	0.00 0.20				20	0		DAS 14 9-30 16/05/24
140 *140* QC Quality Control	QC21- Final Inspection - Work Order Release Memo	0.00 2.00							16/5/25 J

ML3 MAY 24 2016

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition			
				Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : ☐					

Picklist Print

Page 1

Thursday, May 05, 2016 9:25:50 AM

Work Order ID: 145263

145263

Parent Item: D6101-003

D6101-003

Parent Item Name: Saddle Billet, 7075

Start Date: 5/6/2016

Required Date: 5/20/2016

Start Qty: 20.00

Required Qty: 20.00

Comments: IPP A: 01.05.04New IssueEC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

D6101-003P

Purchased

No

110

Each

0.0000

1

20

D6101-003P

7075-T7351 2X6.25X7.875

20x SP/6-05-20

DQA: _____ Date: _____



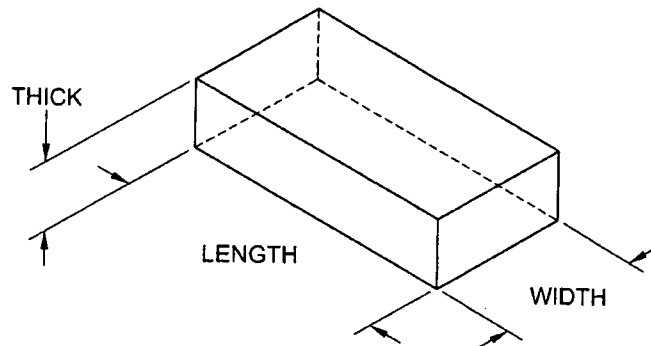
WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐									
Date :		Step #:		QTY Effective :				MRB (QSI042) Approval					
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval					
Root Cause		FAULT CATEGORY											
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐				Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐				Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐		Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐	
		OTHER : ☐											

SPECIFICATION CONTROL DRAWING



PURCHASE MATERIAL ACCORDING TO THE FOLLOWING TABLE. SPECIFY ALLOY, LENGTH x WIDTH x THICK (+0.030/-0.000), AND GRAIN DIRECTION AS SHOWN.

TOLERANCES ON ALL DIMENSIONS ARE +0.030/-0.000.

ALL DIMENSIONS ARE IN INCHES.

B ACCEPTABLE SPECIFICATIONS FOR 7075-T7351 ALUMINUM ARE AMS-QQ-A-250/12, QQ-A-250/12, OR ASTM B209

Part No.	Alloy	Length	Width	Thick	Grain Direction
D6101-001	7075-T7351 (QQ-A-250/12)	6.000	6.250	2.000	Along 6.000 Length
D6101-003	7075-T7351 (QQ-A-250/12)	7.875	6.250	2.000	Along 7.875 Length
D6101-005	7075-T7351 (QQ-A-250/12)	5.000	8.250	2.500	Along 5.000 Length
D6101-007	7075-T7351 (QQ-A-250/12)	7.750	8.250	2.500	Along 7.750 Length
D6101-009	7075-T7351 (QQ-A-250/12)	8.700	8.250	2.500	Along 8.700 Length
D6101-011	7075-T7351 (QQ-A-250/12)	9.700	8.250	2.500	Along 9.700 Length
D6101-013	7075-T7351 (QQ-A-250/12)	10.100	8.250	2.500	Along 10.10 Length
D6101-015	7075-T7351 (QQ-A-250/12)	9.450	6.250	2.500	Along 9.450 Length
D6101-017	7075-T7351 (QQ-A-250/12)	6.350	6.250	2.250	Along 6.350 Length

B

RELEASED
09/07/15/WP

STOP COPY
 RETURN TO
 ENGINEERING
 UNCONTROLLED COPY
 SUBJECT TO AMENDMENT
 WITHOUT NOTICE
 WORK ORDER
 NO 145263 MJS
 160505

B	ADDED D6101-015/-017, ADD ASTM B209	RF	09.04.23
A	NEW ISSUE	CP	01.03.30
REV.	DESCRIPTION	BY	DATE
DESIGN	CP	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA DRAWING NO. D6101 REV. B SHEET 1 OF 1 TITLE SADDLE BILLET, 7075 SCALE NTS COPYRIGHT © 2001 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	
DRAWN	RF		
CHECKED	<i>[Signature]</i>		
MFG. APPR.	<i>[Signature]</i>		
APPROVED	<i>[Signature]</i>		
DE APPR.	<i>[Signature]</i>		
DATE	09.04.23		



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER
Purchase Order ID PO32296

Purchase Order Date 5/9/2016
PO Print Date 5/9/2016

Page Number 1 of 3

Order From :

METAUX CASTLE
P.O. BOX 4090 STN A
TORONTO, ONTARIO M5W OE9
CANADA

VU-MET002

Ship To : DART AEROSPACE LTD
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

E-MAILED

Contact Name
Vendor Phone

Ship To Contact

Ship To Phone

Ship Via:

Yours ppd

Ship Acct:

Buyer
Customer POID
Customer Tax #
Terms
Currency
FOB

Chantal Lavoie

10127-2607
Net 30
USD

Destination-Collect

MAY 09 2016

Line Nbr	Reference Vendor Part Number Line Comments Delivery Comments	Description/ Mfg ID	Req Date/ Taxable Promise Date	CD	Req Qty/ Unit of Measure	PO Unit Price	Extended Price
1	D6101-001P ✓	7075-T7351 2X6X6.25	5/24/2016 Yes 5/24/2016		40.00 ✓ Each	\$26.88	\$1,075.20

AS PER DWG D6101 REV. B
B145262
SIZE: 6.00" X 6.250" X 2.00" THICK
GRAIN DIRECTION ALONG 6.00" LENGHT
MATERIAL: 7075-T7351 QQ-A-250/12
TOLERANCE AS PER QUOTE +.030"/-.000"

Line Total: \$1,075.20

2	D6101-003P ✓	7075-T7351 2X6.25X7.875	5/24/2016 Yes 5/24/2016		20.00 ✓ Each	\$35.29	\$705.80
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AS PER DWG D6101 REV. B
B145263
SIZE: 7.875" X 6.250" X 2.00" THICK
GRAIN DIRECTION ALONG 7.875" LENGHT
MATERIAL: 7075-T7351 QQ-A-250/12
TOLERANCE AS PER QUOTE +.030"/-.000"

88/6-05-20

Note:

5/9/2016

**Castle Metals®**

A. M. Castle & Co.

PACKING SLIP/
CERTIFICATE OF CONFORMANCE

Page 1 of 2

Shipment No:2978240

Ship From:		Sold To:		Ship To:		Deliver To:	
A. M. CASTLE & CO. 2150 ARGENTIA ROAD MISSISSAUGA, ON L5N 2K7 CAN		DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA		DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CAN		DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA	
Date Shipped	F.O.B.	Freight Terms		Carrier		BOL No	
19-MAY-16	ORIGIN	Prepaid		MANITOULIN		2978240-2	

Shipment Details	Final Destination Branch - TOR
-------------------------	---------------------------------------

Order No 4354705	Line No 2	Item No 75223ZMO	Description 2.0000.PL.7075.T7351.ALUMINUM.US1.48.5000.144.5000 CUT RECTANGLE TO 6.25 IN (+ .0310/- .0000 IN (GRAIN TO RUN ALONG 7.875")) X 7.875 IN (+ .0310/- .0000 IN (GRAIN TO RUN ALONG 7.875")) - ALUMINUM PLATE SAW SPECIFICATIONS: AMS-QQ-A-250/12				
Purchase Order No 32296		Part Number YOUR ITEM NUMBER: D6101-003		Ordered Qty 20.00 PCS		Invoice Qty 20.00 PCS	
Details		ALL PAPERWORK MUST FOLLOW ORDER / CUSTOMER MUST RECEIVE AT TIME OF DELIVERY ALL MATERIAL MUST HAVE IDENTIFYING MARKINGS EX:HEAT #'S Email P/s and certs to: clavoie@dartaero.com END USER: DART AEROSPACE END USE: COMMERCIAL AIRCRAFT PARTS					
Delivery No.	Mill	Heat Number	Mech Id	PCS	Width (IN)	Length (IN)	Shipped Qty(LBS)
120431545	KAISER ALUMINUM			7			71.1259
120431545	KAISER ALUMINUM			13			132.0910

These commodities, technology or software were exported from the United States in accordance with the Export Administration Regulations. Diversion contrary to US law prohibited.
Date Printed: 19-MAY-2016 05:51:29 PM



Castle Metals®

A. M. Castle & Co.

**PACKING SLIP/
CERTIFICATE OF CONFORMANCE**

Page 2 of 2

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These commodities/technologies are subject to US Export Administration & US State Dept. Regulations and, if intended for export, were/are exported thereunder. Diversion contrary to US Law is Prohibited.

We hereby certify the material covered by this certification conforms in accordance with the above specifications and has been found to meet the applicable requirements for the material, including any specifications forming a part of the description. Test reports are on file subject to examination. All claims for defective material are waived unless made in writing to A.M. Castle & Co. within 60 days of the shipment. Material cut to the correct size, or material cut by the customer cannot be returned for credit.

Reviewed by Authorized Castle Metals Representative:

Chris G. Galt

Date:

Name:

MAY 19 2016



SHIP TO:

A M CASTLE METALS
4175 ROYAL DRIVE, SUITE 600
KENNESAW, GA 30144

KAISER ALUMINUM

Trentwood Works - Spokane, WA 99215

Phone: (800) 367-2586

SOLD TO:

AM CASTLE & CO- SOLD TO
1420 KENSINGTON RD
SUITE 220
OAK BROOK, IL 60523

CERTIFIED TEST REPORT

Serial Number

4409242

CUSTOMER PO NUMBER: 350906		WORK PACKAGE:	CUSTOMER PART NUMBER: (52237)		SHIP RUN/LOAD: 103484/16	GOV'T CONTRACT NUMBER:
KAISER ORDER NO: 1201307	LINE ITEM: 1	SHIP DATE: 25-FEB-2016	ALLOY: (7075)	CLAD: BARE	TEMPER: (T7351)	PRODUCT DESCRIPTION: KaiserSelect Plate
WEIGHT SHIPPED: 7234 LB	QUANTITY: 5 PCS EST.	TRUCK B/L #: 2058844	GUAGE: (2.0000 IN) (50.8000 MM)	DIAMETER/WIDTH: 48.500 IN (1231.9 MM)		LENGTH: 144.500 IN (3670.3 MM)

MHU 1975315: LOT (16855787): 2 pieces;

MHU 1978130: LOT 784295A8: 2 pieces;

MHU 1978219: LOT 784509A2: 1 pieces;

DAS

14
9-39

Certified Specifications

AMS 4078/RevJ
ASTM B 209/Rev14
BSS 7055/RevB
DPS 4.713/RevAK
MMS 159/RevT

(AMS-QQ-A-250/12/RevA)
ASTM B 594/Rev13
CMMP 025/RevU
GAMPS 9101/RevB/AmdSCN1
PS 21211/RevP

AMS-STD-2154/RevA
BAC 5439/RevJ
CSTI 006/RevE
GSS16100/RevG/Amd1

Test Code: 4297

Test Results

Lot: (16855787) Cast 140

Drop 32

Ingot 4

Melted in USA

(ASTM E8/B557)

(EN 2002-1)

Tensile:

Temper
(T7351)

Dir / # Tests

LT / 2 (Min:Max)

Ultimate KSI (MPA)

74.0 : 74.2

(510 : 512)

Yield KSI (MPA)

63.3 : 63.7

(436 : 439)

Elongation %

12.6 : 12.8

(ASTM E1004)

(EN 2004-1)

Conductivity %IACS :

40.4 Min

40.5 Max

(MS/M) :

23.4 Min

23.5 Max

(ASTM E1251)

Chemistry:

Actual(wt%)

SI

FE

CU

MN

MG

CR

ZN

TI

V

ZR

OTHER

0.05

0.15

1.5

0.02

2.5

0.20

5.9

0.03

0.01

0.01

TOT

0.05



Trentwood Works - Spokane, WA 99215
Phone: (800) 367-2586

CERTIFIED TEST REPORT

Serial Number
4409242

Lot: 784295A8 Cast 140 Drop 28 Ingot 4 Parent Lot: 16769283 Melted in USA

(ASTM E8/B557)

(EN 2002-1)

Tensile:	Temper	Dir / # Tests	Ultimate KSI (MPA)	Yield KSI (MPA)	Elongation %
	T7351	LT / 2 (Min:Max)	72.6 : 72.8 (501 : 502)	62.1 : 62.2 (428 : 429)	12.4 : 12.5

(ASTM E1004)

(EN 2004-1)

Conductivity %IACS :	40.9 Min	41.1 Max
(MS/M) :	23.7 Min	23.8 Max

(ASTM E1251)

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
Actual(wt%)	0.07	0.18	1.4	0.02	2.5	0.20	5.8	0.03	0.01	0.01	TOT 0.05

Lot: 784509A2 Cast 140 Drop 38 Ingot 3 Parent Lot: 16866588 Melted in USA

(ASTM E8/B557)

(EN 2002-1)

Tensile:	Temper	Dir / # Tests	Ultimate KSI (MPA)	Yield KSI (MPA)	Elongation %
	T7351	LT / 2 (Min:Max)	73.9 : 74.6 (510 : 514)	63.1 : 64.4 (435 : 444)	12.1 : 12.3

(ASTM E1004)

(EN 2004-1)

Conductivity %IACS :	40.7 Min	40.7 Max
(MS/M) :	23.6 Min	23.6 Max

(ASTM E1251)

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
Actual(wt%)	0.06	0.15	1.5	0.01	2.5	0.22	5.6	0.02	0.01	0.01	TOT 0.05

KAISER ALUMINUM

Trentwood Works - Spokane, WA 99215
Phone: (800) 367-2586

CERTIFIED TEST REPORT

Serial Number
4409242

ALLOY LIMITS

	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER	MAX
7075												
MIN(wt%)	0.00	0.00	1.2	0.00	2.1	0.18	5.1	0.00	0.00	0.00	EACH	0.05
MAX(wt%)	0.40	0.50	2.0	0.30	2.9	0.28	6.1	0.20	0.05	0.05	TOT	0.15

Aluminum Remainder

ORDER COMMENTS

AMC CA-15413A R 7
AMS 4078,AMS QQ-A-250/12,AMS STD-2154,A
S1M B209,ASTM B594,8S
S 7055,CMMP 025,CSTI 006,DPS 4.713,GAMP
S 9101,MMS 159,PS 212

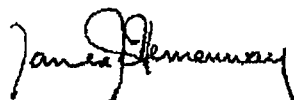
11

TEST NOTES

Metal represented by this test report was 100% Type I
(immersion) ultrasonically tested from one side with 3mm
dead zones top and bottom and meets the Class A and Class B
requirements of all specifications referenced on this test
report. No surface marking of sonic indications is
performed.

CERTIFICATION

Kaiser Aluminum Fabricated Products, LLC (Kaiser), is ISO 9001:2008/AS9100C certified and hereby certifies that all material shipped under this order:
* has been inspected, tested, and found to be in conformance with the requirements of the specifications indicated herein. For material thicknesses outside specification limits, mechanical properties are as shown herein and chemical composition meets specification requirements.
* was melted in the United States of America or a qualifying country per DFARS 225 872-1(a), was manufactured in the United States of America, and meets the requirements of DFARS 252.225 for domestic content.
* has been thermally processed in compliance with AMS 2772, where applicable.
* is mercury free, within the limits of detection of ASTM E1291 (< = 1ppm).
* is in compliance with RoHS 2, European Union Directive 2011/65/EU.
* is in compliance with and regularly monitors any updates to the European Chemical Agency, ECHA, REACH regulations, IEC: n°1907/2006.
* is free of Conflict Minerals, as defined in Section 15.2 of the Dodd-Frank Act.
Any warranty is limited to that shown on Kaiser Aluminum's standard general terms and conditions of sale. Test reports are on file, subject to examination. Test reports shall not be reproduced except in full, without the written approval of the Kaiser Aluminum laboratory. The recording of false, fictitious or fraudulent statements or entries on the certificate may be punished as a felony under federal law.



JAMES HEMENWAY, TECHNICAL PROCESS MANAGER

SHIP TO:

A M CASTLE METALS
4175 ROYAL DRIVE, SUITE 600
KENNESAW, GA 30144

KAISER ALUMINUM

Trentwood Works - Spokane, WA 99215
Phone: (800) 367-2586

SOLD TO:

AM CASTLE & CO- SOLD TO
1420 KENSINGTON RD
SUITE 220
OAK BROOK, IL 60523

CERTIFIED TEST REPORT

Serial Number
4396155

CUSTOMER PO NUMBER: 340546		WORK PACKAGE:	CUSTOMER PART NUMBER: 752237		SHIP RUN/LOAD: 103377/17	GOVT CONTRACT NUMBER:
KAISER ORDER NO: 1197311	LINE ITEM: 1	SHIP DATE: 4-NOV-2015	ALLOY: 7075	CLAD: BARE	TEMPER: T7351	PRODUCT DESCRIPTION: KaiserSelect Plate
WEIGHT SHIPPED: 2878 LB	QUANTITY: 2 PCS EST.	TRUCK B/L #: 2056826	GUAGE: 2.0000 IN (50.8000 MM)	DIAMETER/WIDTH: 48.500 IN (1231.9 MM)		LENGTH: 144.500 IN (3670.3 MM)

MHU 1942987: LOT 15303386: 1 pieces;

MHU 1943402: LOT 15422989: 1 pieces;

DAS

14

9-99

16/05/24

Certified Specifications

AMS 4078/RevJ
ASTM B 209/Rev14
BSS 7055/RevB
DPS 4.713/RevAK
MMS 159/RevT

AMS-QQ-A-250/12/RevA
ASTM B 694/Rev13
CMMP 025/RevU
GAMPS 9101/RevB/AmdSCN1
PS 21211/RevM

AMS-STD-2154/RevA
BAC 5439/RevJ
CSTI 006/RevE
GSS16100/RevG/Amd1

Test Code: 4297

Test Results

Lot: 15303386 Cast 885

Drop 12

Ingot 4

Melted in USA

(ASTM E8/B557)

(EN 2002-1)

Tensile:	Temper	Dir / # Tests	Ultimate KSI (MPA)	Yield KSI (MPA)	Elongation %
	T7351	LT / 2 (Min:Max)	72.8 : 73.0 (502 : 503)	62.3 : 62.6 (430 : 432)	12.4 : 13.0

(ASTM E1004)

(EN 2004-1)

Conductivity %IACS :	40.5 Min	40.7 Max
(MS/M) :	23.5 Min	23.6 Max

(ASTM E1251)

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
Actual(wt%)	0.08	0.18	1.5	0.05	2.4	0.21	5.7	0.03	0.01	0.01	TOT 0.05

NOV 09 2015



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Serial Number
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Lot: 154229B9 Cast 874

Drop 62

Ingot 5

Melted in USA

(ASTM E8/B557)
(EN 2002-1)

Tensile: Temper
17351

Dir / # Tests
LT / 2 (Min:Max)

Ultimate KSI (MPA)
70.5 : 71.8
(486 : 495)

Yield KSI (MPA)
59.2 : 61.0
(408 : 421)

Elongation %
11.5 : 12.7

(ASTM E1004)
(EN 2004-1)

Conductivity %IACS : 39.2 Min
(MS/M) : 22.7 Min

39.4 Max
22.9 Max

(ASTM E1251)

Chemistry:	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER
Actual(wt%)	0.08	0.14	1.4	0.09	2.5	0.21	5.6	0.02	0.01	0.01	TOT 0.05

ALLOY LIMITS

	SI	FE	CU	MN	MG	CR	ZN	TI	V	ZR	OTHER	MAX
7075												
MIN(wt%)	0.00	0.00	1.2	0.00	2.1	0.18	5.1	0.00	0.00	0.00	EACH	0.05
MAX(wt%)	0.40	0.50	2.0	0.30	2.9	0.28	6.1	0.20	0.05	0.05	TOT	0.15

Aluminum Remainder

ORDER COMMENTS

AMC CA-15413A R 7
AMS 4078,AMS QQ-A-250/12,AMS STD-2154,A
STM B209,ASTM B594,BS
S 7055,CMMP 025,CSTI 006,DPS 4.713,GAMP
S 9101,MMS 159,PS 212

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TEST NOTES

Metal represented by this test report was 100% immersion
ultrasonically tested from one side with 3mm dead zones top
and bottom and meets the Class A and Class B requirements of
all specifications referenced on this test report. No
surface marking of sonic indications is performed.

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CERTIFIED TEST REPORT

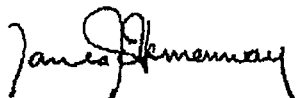
Serial Number
4396155

CERTIFICATION

Kaiser Aluminum Fabricated Products, LLC (Kaiser), is ISO 9001:2008/AS9100C certified and hereby certifies that all material shipped under this order:

- has been inspected, tested, and found to be in conformance with the requirements of the specifications indicated herein. For material thicknesses outside specification limits, mechanical properties are as shown herein and chemical composition meets specification requirements.
- was melted in the United States of America or a qualifying country per DFARS 225.872-1(a), was manufactured in the United States of America, and meets the requirements of DFARS 252.225 for domestic content.
- has been thermally processed in compliance with AMS 2772, where applicable.
- is mercury free, within the limits of detection of ASTM E1251 (4 = 10ppm).
- is in compliance with RoHS 2, European Union Directive 2011/65/EU.
- is in compliance with and regularly monitors any updates to the European Chemical Agency, ECHA, REACH regulations, (EC) n°1907/2006.
- is free of Conflict Minerals, as defined in Section 15.2 of the Dodd-Frank Act.

Any warranty is limited to that shown on Kaiser Aluminum's standard general terms and conditions of sale. Test reports are on file, subject to examination. Test reports shall not be reproduced except in full, without the written approval of the Kaiser Aluminum laboratory. The recording of false, fictitious or fraudulent statements or entries on the certificate may be punished as a felony under federal law.



JAMES HEMENWAY, LABORATORIES SUPERVISOR

